What is claimed is:

1. A disposable solid test strip capable of enabling a person to self-monitor fat loss on a daily basis in a fluid sample of urine, saliva, or sweat or other bodily fluid by providing a color signal, a photochemical signal or an electrochemical signal indicative of at least the β-hydroxybutyrate content of the sample upon being dipped in said sample, removed, allowed to rest briefly and then read.

2. A disposable solid test strip according to Claim 1 wherein the color, photochemical signal or electrochemical signal is indicative of the combined β-hydroxybutyrate and acetoacetate content of the sample.

3. A disposable solid test strip according to Claim 1 wherein the color, photochemical signal or electrochemical signal is indicative of the content of total ketone bodies present in the sample.

4. A solid test strip according to Claim 1 which comprises

    1) an inert support layer and

    2) a dried reagent layer comprising a porous material impregnated with

        a) β-hydroxybutyrate dehydrogenase enzyme ("β-HBD")

        b) nicotinamide adenine dinucleotide ("NAD"),

        c) a tetrazolium dye precursor

d) an electron mediator capable of transferring an electron to said dye precursor to effect a color change and

e) a sufficient quantity of a buffer having a pH of from about 8.6 to about 9.5 to maintain the reaction pH at a level between about 8.6 and about 9.5 when the strip is saturated with a sample of bodily fluid.

5. A solid test strip according to Claim 4 in which the β-HBD enzyme is obtained from *Alcaligenes* or another source which contains β-HBD that is not inhibited by chloride ions and is present in an amount of from about 0.2 to about 5.0 U per strip.

6. A solid test strip according to Claim 4 wherein the tetrazolium dye precursor is nitrobluetetrazolium ("NBT") or 2-(indophenyl)-3-(paranitrophenyl)-5-phenyl tetrazolium chloride ("INT").

7. A solid test strip according to Claim 4 wherein the β-hydroxybutyrate is from a source that is inhibited by chloride ions and is present in an amount per strip from about 1 to about 100 U per strip.

8. A solid test strip according to Claim 4 wherein the electron mediator is a diaphorase enzyme.

9. A test strip according to Claim 2 which is comprised of

1) a inert support layer, and

2) a dried reagent layer comprising a porous material impregnated with:

a) β-HBD enzyme

b) NAD

c) a tetrazolium dye precursor,

d) an electron mediator capable of transferring an electron to said dye precursor to effect a color change and

e) a sufficient quantity of a buffer having a pH between about 7.0 and about 8.3 to maintain the reaction pH between about 7.0 and about 8.3 when the strip is saturated with sample.

10. A test strip according to claim 9 wherein the β-BHD is obtained from *Alcaligenes* or another source found to produce β-HBD that is uninhibited by chloride ions and is present in an amount of from about 0.2 to about 5.0 U per strip.

11. A test strip according to claim 9 wherein the β-HBD is obtained from a source such that it is inhibited by chloride ions, and it is present in an amount per strip from about 1 to about 100 U per strip.

12. A test strip according to Claim 9 wherein the tetrazolium dye precursor is NBT or INT.

13. A test strip according to Claim 9 wherein the electron mediator is a diaphorase enzyme.

14. A test strip according to Claim 2 comprising:

1) an inert support layer and

2) a dried reagent layer comprising a porous material impregnated with:

a) NAD,

b) β-HBD,

c) a nitroprusside salt or a diazonium salt in a quantity sufficient to react with endogenous acetoacetate in the sample and acetoacetate obtained by conversion thereto of β-hydroxybutyrate in the sample,

d) a tetrazolium dye precursor ,

e) an electron mediator,

f) and a sufficient quantity of a buffer having a pH from about 8.6 to about 9.5 to maintain the strip at a level pH of about 8.6 to about 9.5 when saturated with sample.

15. A test strip according to Claim 14 wherein the β-HBD is from a source selected from among *Alcaligenes* and others capable of producing β-HBD that is uninhibited by chloride ions and is present in an amount of from about 0.2 to about 5.0 U per strip.

16. A test strip according to Claim 14 wherein the β-HBD is obtained from a source such that it is inhibited by chloride ions and is present in an amount per strip from about 1 to about 100 U per strip.

17. A test strip according to Claim 14 wherein the electron mediator is a diaphorase enzyme.

18. A test strip according to Claim 14 wherein the tetrazolium dye precursor is NBT or INT.

19. A test strip according to Claim 14 wherein ingredient (c) is sodium nitroprusside.

20. A test strip according to Claim 14 wherein ingredient (c) is a diazonium salt.

21. A test strip according to Claim 20 wherein ingredient (c) is 4-nitrobenzene diazonium fluoborate.

22. A test strip according to claim 2 comprising

    1) an inert support layer

    2) a dried reagent layer comprising a porous material impregnated with:

        a) NAD

        b) β-HBD

        c) a nitroprusside salt or a diazonium salt in a quantity sufficient to react with endogenous acetoacetate in the sample and acetoacetate obtained by conversion thereto of β-hydroxybutyrate in the sample,

d) and a sufficient quantity of a buffer having a pH from about 8.6 to about 9.5 to maintain the strip at a level of about 8.6 to about 9.5 when saturated with a sample from the group consisting of urine, saliva and sweat.

23. A test strip according to Claim 22 wherein the β-HBD is from a source selected from among *Alcaligenes* and others capable of producing β-HBD that is uninhibited by chloride ions and is present in an amount from about 0.2 to about 5.0 U per strip.

24. A test strip according to Claim 22 wherein the β-HBD is obtained from a source such that it is inhibited by chloride ions and is present in an amount per strip from about 1 to about 100 U per strip.

25. A test strip according to Claim 22 wherein the ingredient (c) is a nitroprusside salt.

26. A test strip according to Claim 25 wherein ingredient (c) is sodium nitroprusside.

27. A test strip according to Claim 22 wherein ingredient (c) is a diazonium salt.

28. A test strip according to Claim 27 wherein ingredient (c) is 4 nitrobenzene diazonium fluoborate.

29. A test strip according to Claim 3 comprising

1) an inert support layer and

2) a dried reagent layer comprising

a) β-HBD

b) NAD

c) nitroprusside salt or a diazonium salt in sufficient quantity to

(i) immediately react with the acetone present in the sample and stabilize it against volailization

(ii) also react with the endogenous acetoacetate in the sample and with acetoacetate obtained by conversion thereto of β-hydroxybutyrate in the sample

d) a sufficient quantity of a buffer having a pH from about 8.6 up to about 9.5 to maintain the reaction pH between about 8.6 and about 9.5 when the strip is saturated with sample.

30. A test strip according to Claim 29 wherein the β-HBD is obtained from *Alicaligenes* or another source such that it is not inhibited by chloride ions and it is present in an amount of about 0.2 to 5.0 U per strip.

31. A test strip according to Claim 29 wherein the β-HBD is obtained from a source such that it is inhibited by chloride ions and it is present in an amount from 1.0 to about 100 U per strip.

32. A test strip according to Claim 29 in which the salt is a nitroprusside salt.

33. A test strip according to Claim 32 in which the nitroprusside salt is sodium nitroprusside.

34. A test strip according to Claim 29 in which the salt is a diazonium salt.

35. A test strip according to Claim 34 in which the diazonium salt is 4-nitrobenzene diazonium fluoborate.

36. A method for monitoring the level of β-hydroxybutyrate present in a sample of human bodily fluid which comprises contacting a sample of said fluid with a mixture of

a) β-HBD which has been obtained from a *Alcaligenes* or another source such that is uninhibited by chloride ions,

b) NAD,

c) a tetrazolium dye precursor,

d) an electron mediator capable of transferring an electron to said dye precursor to effect a color change and

e) a buffer having a pH of from about 8.6 to about 9.5,

and measuring by electrochemical, spectrophotometric or fluorometric means, or by comparison of the color developed to a preestablished color intensity standard, the amount of β-hydroxybutyrate in the sample.

37. A method according to Claim 36 wherein the tetrazolium dye precursor is NBT or INT.

38. A method according to Claim 36 wherein the electron mediator is a diaphorase enzyme.

39. A method for monitoring the level of combined acetoacetate and β-hydroxybutyrate present in a sample of human bodily fluid which comprises contacting the sample with a mixture comprising the following ingredients:

a) β-HBD which has been obtained from *Alcaligenes* or another source such that it is not inhibited by chloride ions,

b) NAD,

c) a tetrazolium dye precursor,

d) an electron mediator capable of transferring an electron to said dye precursor to effect a color change, and

e) a buffer having a pH from about 7.0 to about 8.3,

and measuring by electrochemical, spectrophotometric or fluorometric means, or by comparison of the color developed to a preestablished color intensity standard, the amount of β-hydroxybutyrate plus acetoacetate present in the sample.

40. A method according to Claim 39 wherein the tetrazolium dye precursor is NBT or INT.

41. A method according to Claim 39 wherein the electron mediator is diaphorase enzyme.

42. A method for monitoring the level of combined β hydroxybutyrate an acetoacetate present in a sample of human bodily fluid which comprise contacting said sample with a mixture comprising the following ingredients:

a) β-HBD which has been obtained from *Alcaligenes* or another source such that is is not inhibited by chloride ions,

b) NAD,

c) a nitroprusside salt of react with endogeous acetoacetate in the sample and acetoacetate obtained by conversion thereto of β-hydroxyrate in the sample, and

d) a buffer having a pH of from about 8.6 to about 9.5

and measuring by electrochemical, spectrophotometric or fluorometric means, or by comparison of the color developed to a preestablished color intensity standard, the amount of combined acetoacetate and β-hydroxybutyrate in the sample.

43. A method according to Claim 42 wherein ingredient (c) is a nitroprusside salt.

44. A method according to Claim 43 in which the nitroprusside salt is sodium nitroprusside.

45. A method according to Claim 42 wherein ingredient (c) is a diazonuim salt.

46. A method according to Claim 45 wherein the diazonium salt is 4- nitrobenzen-diazonium.

47. A method according to Claim 42 having increased sensitivity wherein a tetrazolium dye precursor and an electron mediator are included in the mixture in addition to ingredients (a), (b), (c) and (d).

48. A method according to Claim 47 in which the tetrazolium dye precusor is NBT or INT and the electron mediator is a diaphorase enzyme.

49. A method for monitoring the level of total ketone bodies in a sample of human bodily fluid which comprises contacting said sample with a mixture containing the following ingredients:

a) β-HBD which has been obtained from *Alcaligenes* or another source such that it is not inhibited by chloride ions,

b) NAD,

c) a nitroprusside or diazonium salt in a quantity sufficient to

(i) react instantaneously with and stabilize against volatilization the acetone in the sample,

(ii) react with endogenous acetoacetate in the sample and

(iii) react with acetoacetate formed by conversion thereto to β-hydroxybutyrate in the sample, and

d) a buffer having pH of from about 8.6 to about 9.5 and measuring by electrochemical, spectrophotometric or fluorometic means, or by comparison of the color developed to a preestablished color intensity standard, the amount of total ketone bodies in the sample.

50. A method according to Claim 49 wherein & ingredient (c) is a nitroprusside salt.

51. A method according to Claim 50 wherein ingredient (c) is sodium nitroprusside.

52. A method according to Claim 51 wherein ingredient (c) is a diazonium salt.

53. A method according to Claim 52 wherein ingredient (c) is 4-nitrobenzene diazonium fluoborate.

54. A method for monitoring the level of β-hydroxybutyrate present in a sample of human bodily fluid which comprises contacting a sample of said fluid with a mixture containing the following ingredients:

a) at least 20 U per milliliter ("ml.") of β -HBD obtained from a source such that it is inhibited by chloride ions,

b) NAD,

c) a tetrazolium dye precursor,

d) an electron mediator capable of transferring an electron to said dye precursor to effect a color change and

e) a buffer having a pH of from about 8.6 to 9.5,

and measuring by electrochemical, spectrophotometric or fluorometric means or by comparison of the color developed to a preestablished color intensity standard, the amount of β-hydroxybutyrate in the sample.

55. A method according to Claim 54 wherein the tetrazolium dye precursor in NBT or INT.

56. A method according to Claim 54 wherein the electron mediator is a diaphorase enzyme.

57. A method for monitoring the level of combined acetoacetate and β-hydroxybutyrate present in a sample of human bodily fluid which comprises contacting the sample with a mixture comprising the following ingredients:

a) at least 20 U per ml of β-HBD which has been obtained from a source such that it is inhibited by chloride ions,

b) NAD,

c) a tetrazolium dye precursor,

d) an electron mediator capable of transferring an electron to said dye precursor to effect a color change and

e) a buffer having a pH from about 7.0 to about 8.3,

and measuring by electrochemical, spectrophotometric or fluorometric means, or by comparison of the color developed to a preestablished color intensity standard, the amount of acetoacetate plus β-hydroxybutyrate present in the sample.

58. A method according to claim 57 wherein the tetrazolium dye precursor is NBT or INT.

59. A method according to claim 57 wherein the electron mediator is diaphorase enzyme.

60. A method for monitoring the level of combined β-hydroxbutyrate and acetoacetate present in a sample of human bodily fluid which comprised contacting said sample with a mixture comprising the following ingredients:

a) at least 20 U per ml. of β-HBD which has been obtained from a source such that it is inhibited by chloride ions,

b) NAD,

c) a nitroprusside salt or a diazonium salt in an amount sufficient to react with endogenous acetoacetate in the sample and acetoacetate obtained by conversion thereto of β-hydroxybutyrate in the sample, and

d) a buffer having a pH of from about 8.6 to about 9.5,

and measuring by electrochemical, spectrophotometric of flurometric means, or by comparison of the color developed to a preestablished color intensity standard, the amount of combined acetoacetate and β-hydroxybutyrate present in the sample.

61. A method according to Claim 60 wherein ingredient (c) is a nitroprusside salt.

62. A method according to Claim 61 wherein ingredient (c) is sodium nitroprusside.

63. A method according to Claim 60 wherein ingredient (c) is a diazonium salt.

64. A method according to Claim 63 wherein ingredients (c) is 4-nitrobenzene diazoium fluoborate.

65. A method according to Claim 60 having increased sensitivity wherein a tetrzolium dye precursor and an electron mediator are included in said mixture in addition to ingredients (a), (b), (c) and (d).

66. A method according to Claim 65 wherein the tetrazolium dye precursor is NBT or INT and the electron mediator is a diaphorase enzyme.

67. A method for monitoring the level of total ketone bodies present in a sample of human bodily fluid which comprises contacting said sample with a mixture containing

a) at least 20 U per ml. of β-HBD which has been obtained from a source such that it is inhibited by chloride ion,

b) NAD,

c) a nitroprusside or a diazonium salt in a quantity sufficient to

(i) react instantaneously with and stabilize against volatilization the acetone in the sample,

(ii) react with endogenous acetoacetate in the sample and

(iii) react with acetoacetate formed by conversion thereto of β hydroxybutyrate in the sample, and

d) a buffer having a pH of from about 8.6 to about 9.5, and measuring by electrochemncial, spectropotometiric or fluormoetric means, or by comparison of the color developed to a preexisitng color intensity standard, the amount of total ketone bodies in the sample.

68. A method according to Claim 67 wherein ingredient (c) is a nitroprusside slat.

69. A method according to Claim 68 wherein ingredient (c) is a sodium nitroprusside.

70. A method according to Claim 67 wherein ingredient (c) is a diazonium slat.

71. A method according to Claim 70 wherein ingredient (c) is 4-nitrobenzene fluoborate.